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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/827,816

04/06/2001

Magnus Karlsson

TI-32579

6860

23494

7590

10/17/2006

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EXAMINER:

HO, CHUONG T

ART UNIT

PAPER NUMBER

2616

DATE MAILED: 10/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/827,816

Applicant(s)

KARLSSON ET AL.

Examiner

CHUONG T. HO

Art Unit

2616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

1. The amendment filed 10/05/06 have been entered and made of record.
2. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.
3. Claims 1-20 are pending.
4. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-2, 6, 8-9, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frey et al. (U.S. Patent No. 5,982,783) in view of Rabenko et al. (U.S. Patent No. 20020018463 A1).

Regarding to claim 1, see figure 6, figure 5, Frey et al. discloses DSP ISR/DMA 430 manages communication of commands, response, and data between protocol processor 303 and DSPs 302(see col. 13, lines 45-50); comprising:

- A direct memory access unit (figure 6, 5, ISR/DMA ) configured to fetch a signaling and management packet from said host processor (col. 13, lines 45-50, figure 5, protocol processor 303), wherein said signaling and management packet includes a transmit channel identifier (see col. 14, lines 34-36, ATM VPI/VCI)

However, Frey et al. are silent to disclosing a first direct memory access (DMA) unit configured to fetch a voice packet from said DSP sub-system, wherein said voice packet include a physical phone line identifier.

Rabenko et al. disclose a first direct memory access (DMA) (see page 6, [0070], DMA (direct memory access) unit configured to fetch a voice packet from said DSP sub-system (page 2, [0015], voice processor module....each comprise a digital processor module, page 6, [0070]), wherein said voice packet include a physical phone line (page 1, [0008], customer's telephone line) identifier.

Both Frey and Rabenko discloses ATM adaptation layer type 2. Rabenko recognizes a first direct memory access (DMA) unit configured to fetch a voice packet from said DSP sub-system, wherein said voice packet include a physical phone line identifier. Thus, it would have been obvious to one skill in the art at the time of the invention to modify the system of Frey with the teaching of Rabenko to provide a first direct memory access (DMA) unit configured to fetch a voice packet from said DSP sub-system, wherein said voice packet include a physical phone line identifier in order to interleave the voice, and signaling and management into the AAL2 data stream.

7. In the claim 8, see figure 6, figure 5, Frey et al. discloses DSP ISR/DMA 430 manages communication of commands, response, and data between protocol processor 303 and DSPs 302(see col. 13, lines 45-50); comprising:

- A second direct memory access unit (figure 6, 5, ISR/DMA ) configured to fetch a signaling and management packet from said host processor (col. 13, lines 45-50, figure 5, protocol processor 303), wherein said signaling and management

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packet includes a transmit channel identifier (see col. 14, lines 34-36, ATM VPI/VCI);

- A host processor operably configured to enable ATM adaptation layer signaling and management (see col. 14, lines 34-36, AAL2) and transmit a corresponding signaling and management packet including a transmit channel identifier (col. 14, lines 34-36, VPI/VCI).

However, Frey et al. are silent to disclosing a digital signal processor having input for receiving a voice; a first direct memory access (DMA) unit configured to fetch a voice packet from DSP sub-system.

Rabenko et al. disclose a digital signal processor having input for receiving a voice (see page 6, [0070], voice packets);

a first direct memory access (DMA) (see page 6, [0070], DMA (direct memory access) unit configured to fetch a voice packet from said DSP sub-system (page 2, [0015], voice processor module....each comprise a digital processor module, page 6, [0070]), wherein said voice packet include a physical phone line (page 1, [0008], customer's telephone line) identifier.

Both Frey and Rabenko discloses ATM adaptation layer type 2. Rabenko recognizes a first direct memory access (DMA) unit configured to fetch a voice packet from said DSP sub-system, wherein said voice packet include a physical phone line identifier. Thus, it would have been obvious to one skill in the art at the time of the invention to modify the system of Frey with the teaching of Rabenko to provide a first direct memory access (DMA) unit configured to fetch a voice packet from said DSP sub-system,

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wherein said voice packet include a physical phone line identifier in order to interleave the voice, and signaling and management into the AAL2 data stream.

8. In the claim 16, Frey et al. disclose fetching a signaling and management packet from said host processor (see col. 13, lines 45-50 , figure 5, protocol processor 303) using a Direct Memory Access (DMA) operation, said signaling and management packet including a transmit channel identifier (see col. 14, lines 34-36, ATM VPI/VCI); and forwarding said signaling and management packet to a transmit buffer (figure 5, 300, figure 6, 431) (col.13, lines 45-50)

However, Frey et al. are silent to disclosing fetching a voice packet from said DSP sub-system using a Direct Memory Access (DMA) operation, said voice packet including a physical phone line identifier corresponding to an originating voice channel supported by said DSP sub-system.

Rabenko discloses fetching a voice packet from said DSP sub-system using a Direct Memory Access (DMA) operation, said voice packet including a physical phone line identifier corresponding to an originating voice channel supported by said DSP sub-system (see page 6, [0070], DMA (direct memory access) (page 2, [0015], voice processor module....each comprise a digital processor module, page 6, [0070]); forwarding said signaling and management packet to a transmit buffer (figure 5, 504) associated with a identified transmit channel.

Both Frey and Rabenko discloses ATM adaptation layer type 2. Rabenko recognizes a first direct memory access (DMA) unit configured to fetch a voice packet from said DSP sub-system, wherein said voice packet include a physical phone line identifier.

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Thus, it would have been obvious to one skill in the art at the time of the invention to modify the system of Frey with the teaching of Rabenko to provide a first direct memory access (DMA) unit configured to fetch a voice packet from said DSP sub-system, wherein said voice packet include a physical phone line identifier in order to interleave the voice, and signaling and management into the AAL2 data stream.

9. In the claims 9, 2, Frey et al. discloses ATM system is an AAL2 module.

10. In the claim 6, Rabenko discloses first direct memory access unit (figure 5, buffer 504) further operably configured to fetch voice packet from a voice buffer associated with each digital signal processor in DSP sub-system (voice processor module) (see figure 5, figure 6, col. 13, lines 45-50)

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 3-5, 7, 10-15, 17-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined system (Frey – Rabenko) in view of Rostoker et al. (U.S. Patent No. 5,640,399).

In the claims 3, 10, 17, the combined system (Frey – Rabenko) discloses the limitations of claim 1 above.

However, the combined system (Frey – Rabenko) is silent to disclosing a router identifier table having a memory for storing channel pointers, wherein physical line identifier indexes to a particular channel pointer which identifies a transmit channel in a channel state table; and wherein channel state table having a memory for storing channel information for a plurality of transmit channels, channel information including a pointer to a transmit buffer, wherein voice and signaling and management packets identified to a particular transmit buffer are forward to particular transmit buffer for further processing and transmission to a destination port.

Rostoker et al. discloses a router identifier table having a memory for storing channel pointers, wherein physical line identifier indexes to a particular channel pointer which identifies a transmit channel in a channel state table; and wherein channel state table having a memory for storing channel information for a plurality of transmit channels, channel information including a pointer to a transmit buffer, wherein voice and signaling and management packets identified to a particular transmit buffer are forward to particular transmit buffer for further processing and transmission to a destination port (see figures 7, 6, 5B; col. 21, lines 50-55).

Both Frey, Rabenko, and Rostoker discloses AAL type to process. Rostoker recognizes a router identifier table having a memory for storing channel pointers, wherein physical line identifier indexes to a particular channel pointer which identifies a transmit channel in a channel state table. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Frey - Rabenko) with the teaching of Rostoker to provide a router identifier table having a



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memory for storing channel pointers, wherein physical line identifier indexes to a particular channel pointer which identifies a transmit channel in a channel state table in order to multiplexing a plurality of physical phone line onto one ATM channel.

3. In the claims 4, 11, 12, the combined system (Frey – Rabenko) discloses the limitations of claim 3 above.

However, the combined system (Frey – Rabenko) is silent to disclosing a plurality of entries in router identifier table identifies a particular transmit channel for multiplexing a plurality of physical phone line (voice processing trunk) onto one ATM channel.

Rostoker discloses a plurality of entries in router identifier table identifies a particular transmit channel for multiplexing a plurality of physical phone line (voice processing trunk) onto one ATM channel (see figures 7, 6, 5B, col. 21, lines 50-55).

Both Frey, Rabenko, and Rostoker discloses AAL type to process. Rostoker recognizes a plurality of entries in router identifier table identifies a particular transmit channel for multiplexing a plurality of physical phone line (voice processing trunk) onto one ATM channel. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Frey – Rabenko) with the teaching of Rostoker to provide a plurality of entries in router identifier table identifies a particular transmit channel for multiplexing a plurality of physical phone line (voice processing trunk) onto one ATM channel in order to multiplexing a plurality of physical phone line onto one ATM channel.

4. In the claims 5, 13, 18, 19, the combined system (Frey – Rabenko) discloses the limitations of claim 3 above.

However, the combined system (Frey – Rabenko) is silent to disclosing forwarding voice and signaling and management packet payload to particular transmit buffer.

Rostoker discloses forwarding voice and signaling and management packet payload to particular transmit buffer (see figures 7, 6, 5B, col. 21, lines 50-55).

Both Frey, Rabenko, and Rostoker discloses AAL type to process. Takechi recognizes forwarding voice and signaling and management packet payload to particular transmit buffer. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Frey – Rabenko) with the teaching of Rostoker to provide forwarding voice and signaling and management packet payload to particular transmit buffer in order to multiplexing a plurality of physical phone line onto one ATM channel.

5. In the claims 7, 14, 15, 20, the combined system (Frey – Rabenko) discloses the limitations of claim 3 above.

However, the combined system (Frey – Rabenko) is silent to disclosing the apparatus of Claim 3 implemented in hardware.

Rostoker discloses the apparatus of Claim 3 implemented in hardware (see figures 7, 6, 5B, col. 21, lines 50-55).

Both Frey, Rabenko, and Rostoker discloses AAL type to process. Takechi recognizes the apparatus of Claim 3 implemented in hardware. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the combined system (Smith – Caves) with the teaching of Rostoker to provide the

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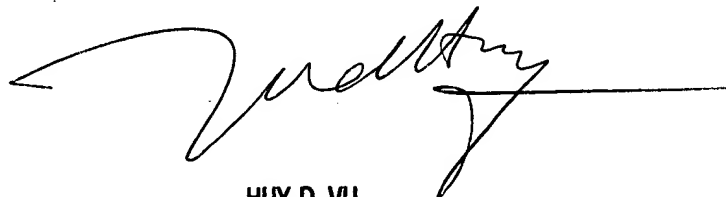
apparatus of Claim 3 implemented in hardware in order to multiplexing a plurality of physical phone line onto one ATM channel.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHUONG T. HO whose telephone number is (571) 272-3133. The examiner can normally be reached on 8:00 am to 4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

10/12/06

A handwritten signature in black ink, appearing to read 'Huy D. Vu', with a long horizontal line extending to the right.

HUY D. VU  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600